

$$N(t) = Ce^{0,085t} \quad (0 \leq t \leq 4) \quad (4)$$

At  $t = 0$ ,  $N(0) = 5\,000$ , which when substituted into (4) yields

$$5000 = Ce^{0,085 \cdot 0} = C$$

and (4) becomes

$$N(t) = 5000e^{0,085t} \quad (0 \leq t \leq 4) \quad (5)$$

Substituting  $t = 4$  into (5), we find the balance after four years to be

$$N(4) = 5000e^{0,085 \cdot 4} = \$7\,024,74$$

This amount also represents the beginning balance for the last three-year period.

Over the last three years, the interest rate is 9,25 percent and (1) becomes

$$\frac{dN}{dt} - 0,0925N = 0 \quad (4 \leq t \leq 7) \quad (6)$$

Its solution is

$$N(t) = Ce^{0,0925t} \quad (4 \leq t \leq 7)$$

At  $t = 4$ ,  $N(4) = \$7024,74$ , which when substituted into (6) yields

$$7024,74 = Ce^{0,0925 \cdot 4} \Rightarrow C = 4852,23$$

and (6) becomes

$$N(t) = 4852,23e^{0,0925t} \quad (4 \leq t \leq 7) \quad (7)$$

Substituting  $t = 7$  into (7), we find the balance after seven years to be

$$N(7) = 4852,23e^{0,0925 \cdot 7} = \$9\,271,44$$

**UDS 338.22**

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## **SMART TOURISM DEVELOPMENT AS A COUNTRY'S ECONOMY DRIVE FORCE**

The term “smart tourism” has been used a lot lately by majority of tourism experts and professionals. However, what does it actual mean? Smartness refers to the use of technological innovations in order to cut

costs, boost efficiency, and have more sustainable solutions [1]. Smart tourism is a progression of traditional tourism, which uses the technological advances and practices to maximize competitiveness and increase sustainability. Smart tourism is constructed from three main components, which are Smart Destination, Smart Experience and Smart Business [2]. Smart destinations are smart city principles applied to different areas (rural and urban), the most important aspect of smart destinations is the merging of Information and Communication Technology (ICT) into physical infrastructure. The smart experience is focused on tourism experiences integrated with technology and the use of personalization, real-time monitoring for its enhancement. Tourists play a significant role in this component, as they are the ones to create and consume the data which establishes the basis of the experience. The third component – Smart Business, is a compound business ecosystem which enables the exchange of touristic resources and the tourism experience co-creation. Moreover, this component is characterized by dynamically interconnected stakeholders, a special part of which is public-private collaboration.

It is a fact that tourism industry itself make up a huge part of the world's GDP. It is crucial for the country to develop its tourism sector for many different reasons. Developed tourism sector has both global and national impacts. As for global impact, two billiard US dollars are brought by it on daily basis, which annually covers approximately one billion people.

Whereas one of the most important national impacts is economical, precisely - growth and development of national economy [3]. The industry of tourism is considered as one of the most developed industries with highest annual growth rate. 283 million jobs and 9.8% of Global GDP accounts for tourism industry, which shows that tourism development influence positively on the economy of the countries [4]. Nowadays, international tourism exports ranks fourth after fuel, chemicals and automotive products. Tourism is one of the main income sources for many developing countries, creating jobs and opportunities for development. Therefore, the sustainable development of tourism sector and promotion of the host country have been considered very crucial for country's further development and progress.

One of the countries that has successfully developed smart tourism is Spain, particularly – Barcelona. Barcelona used new technology to pro-

mote economic growth and for improvement of its citizen's well-being. Today, the city is established as the worldwide leading smart city, with many studies ranking Barcelona among the smartest in Spain, Europe and internationally. In March 2014, it was awarded the European Capital Of Innovation prize for introducing new technology to stay better connected to citizens. As a result of successful implementation of a new strategy, targeted at the implementation and development of smart tourism, €85 million added GDP impact, 21,600 jobs creation, 1870 of which were directly created by the smart-city programs. In 2011, €53.7 million were invested in smart projects by the City Council, and for each invested euro, an additional €0.53 euros were invested by the third parties. It is visible, that the government has invested a lot of money and effort in the development of smart tourism sector in Barcelona and in 2014 it was awarded the European Capital of Innovation or promotion of broad-based innovation culture. Barcelona experience an economic boost after the implementation of the smart programs. The key aspect of these programs reflected and continues to reflect the strategic use of technology in development of smart city.

The case of Barcelona is just an example of how the government of the host country can use the development of smart tourism for its economic benefits. There are other smart cities, such as Amsterdam, which uses beacons to let tourists signs translate themselves in any needed language. Sunmoon Lake in Tawain provides information about the location of the tourist buses and etc. The are two main ways of how the country accumulates money from tourism in general: direct contributions and indirect contributions. Direct contribution refers to generated taxes on incomes from tourism businesses and employment. Indirect contribution are accumulated through goods and services supplied to tourists, such as food. With the expansion of smart tourism and tourism industry in general, more jobs have been created, which accounts for direct and indirect employment. The first one are the jobs which are associated with the tourism industry such as hotel employees, taxi drivers and etc. Jobs which are not technically in the tourism industry but are related to it is indirect employment. Indirect employment can be hard to be calculated, therefore it is difficult to measure the exact impact of smart tourism on the economy of the country. The money that the governments make from the smart tourism development can be used later elsewhere, for example to improve the healthcare or infrastructure.

Coming back to the example of Barcelona, from the very beginning the state officials aimed to develop smart tourism in the area in order to boost the economy and to improve the lives of the local citizens. To conclude, smart tourism sector has been developing rapidly in the past years. Some might say that with the emergence and development of new computer technology and ICT, smart tourism is the evolution of tourism sector as a whole. The development of smart tourism has been prioritized by many developing countries to boost the economy, and the example of smart city in Barcelona shows that a successfully implemented smart city program improves the economy of the host country by increasing employment, destination image promotion and etc.

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### **ПОВЫШЕНИЕ ЭФФЕКТИВНОСТИ ФУНКЦИОНИРОВАНИЯ ПУП «ЗАВОД БЕЛКООППРОГРЕСС» БЕЛКОПСОЮЗА**

Подсчет рабочего времени – очень трудоемкий процесс. Именно поэтому для упрощения этой процедуры, своевременного и оперативного упорядочения всех данных о сотрудниках в ПУП «Завод Белкооппрогресс» Белкопсоюза целесообразно применять автомати-